

prothorace utrinque omnino rotundato, leviter vage punctato.
Long. $5\frac{1}{2}$ lin.

Hab. Sarayacu.

Elliptic, glossy black; rostrum shorter than the elytra, curved from the base, striate-punctate beyond the insertion of the antennæ; prothorax with the sides rounded throughout, the narrow collar at the apex excepted, rather minutely punctured; elytra more gradually narrowed from the base, finely punctate-striate; body beneath punctured throughout.

In its only congener, *E. reflexus*, the rostrum is longer than the elytra and much more slender, the curved portion being chiefly confined to the apical half; the prothorax is somewhat incurved behind the apex, and the elytra are more rapidly narrowed behind.

XXXVIII.—*Striated Muscles in Echinida*. By FRANK E. BEDDARD, M.A., F.R.S.E., Prosector to the Zoological Society.

THE April number of this journal contains (p. 388) a translation of a short note by Dr. Otto Hamann on striated muscles in the Echinida, which is evidently preliminary to the publication of a more detailed memoir; the gist of it is contained in the following sentences:—

“In Holothuriæ and Asterida I have sought in vain for transversely striated fibres, but I have now succeeded in finding them in the Echinida. They occur, however, only in a few places, and, indeed, in places where a sudden, rapid, and energetic contraction has to take place. The largest forms of pedicellariæ, the *pedicell. tridentes* s. *tridactyles*, are best fitted for examination. . . . The musculature which moves the three arms . . . distinctly shows transverse striation.”

The author does not refer to any previous investigations on the subject, but makes his statements in such a way that any one reading the note would naturally assume that Dr. Hamann himself had made the discovery referred to.

As a matter of fact the above-quoted observations are not new, but simply confirm the results of an investigation by Mr. Patrick Geddes and myself. Our paper, “On the Structure of the Pedicellariæ and Muscles of *Echinus sphaera*,” was published in vol. xxx. of the ‘Transactions of the Royal Society of Edinburgh;’ a brief abstract had been previously com-

municated to the French Academy ('Comptes Rendus,' 1881, Feb. 7, p. 308), and this was translated into the *Ann. & Mag. Nat. Hist.* (vol. vii. ser. 5, 1881, p. 275). The research was completed at M. de Lacaze-Duthiers's laboratory at Roscoff, and a notice of the main results was published, simultaneously with the detailed communication to the Royal Society of Edinburgh, in the '*Archives de Zoologie Expérimentale*' (tome x. "Notes et Revue," p. xvii). In the '*Transactions*' paper the muscles of the pedicellariæ—those which serve as adductors of the valves—are figured (pl. xx. fig. 2), and the fact that they are striated is noted in the text (p. 387) of that paper as well as in the other communications on the subject.

Since that was written I have had the opportunity, at the Zoological Station of Naples, of studying the structure of the pedicellariæ in other Echinoids, and have found, as might be expected, that there is an entire similarity. In *Echinus melo* and *Echinus brevispinosus* the muscles of the "ophiocephalous" pedicellariæ are striated; in the former species I also observed a striation in the "gemmiform" pedicellariæ, which Mr. Geddes and I were unable to prove in the case of *E. sphaera*. In *Toxopneustes lividus* both the "tridactyle" and "ophiocephalous" pedicellariæ contain striated muscles. Finally, in a species of *Arbacia* which is very abundant at Naples the "ophiocephalous" pedicellariæ show striations. The above statement must not be understood to imply that the other forms of pedicellariæ not mentioned—for example the "gemmiform" pedicellariæ of *Echinus brevispinosus*—are without striated muscles; I simply take this opportunity of noting a few observations made by me at Naples in the year 1881, which are too fragmentary to be worth publishing in detail.

It is not always possible to detect the striations in the pedicellaria-muscles; and the failure of previous observers to detect them is no doubt due to imperfect methods of preservation. Mr. Murray kindly allowed me to examine a number of the 'Challenger' Echinoidea, with a view to an investigation on the comparative anatomy of the pedicellariæ; in no instance, however, did I succeed in seeing any striation on the muscles, which is probably owing to the fact of their preservation in alcohol. The reagents which Mr. Geddes and I found to be best for displaying the striation are mentioned in our paper.

In our paper on *Echinus sphaera* the existence in the ophiocephalous pedicellariæ of certain remarkable skeletal structures was referred to; these have the form of flat plates of elastic tissue formed of a number of about equally-sized

fibres, which anastomose with each other and form a highly complicated structure (*loc. cit.* pl. xx. figs. 10, 11). These also exist in the tridactyle pedicellariæ, but are much smaller and hard to discover in teased preparations. I have since found these structures in other species of *Echinus* in the same situation and in the ophiocephalous pedicellariæ of *Arbacia*. It would be interesting to have some further information as to the nature and distribution of these very curious structures.

XXXIX.—*Description of a hitherto unnamed Butterfly from Madeira.* By ARTHUR G. BUTLER, F.L.S. &c.

WHILST incorporating the Zeller collection of Pierinæ with our Museum series I came across two specimens of a species from Madeira labelled as the *P. cheiranthi* of Hübner, but differing considerably from that species.

On referring to the Wollaston cabinet of Madeiran insects I found eight specimens of the same species; proving its constancy. I therefore propose to call this butterfly

Ganoris Wollastoni, sp. n.

Intermediate between *G. cheiranthi* and *nipalensis*, differing from the former in its inferior size, paler and greener tint in both sexes, the female without distinctly yellow secondaries and with the black spots smaller and less distinctly confluent, the three median veins all blackened beyond the black spots. Under surface quite different from that of either species, the tint of secondaries and apex of primaries being greener even than in *G. brassicæ*. From *G. nipalensis* it differs in having a black longitudinal dash on the second median interspace on the upper surface of the male, and the black spots in the female more or less united by a sinuated blackish streak from the inner margin; all three median branches blackened (whereas in *G. nipalensis* only the second and third are black); the secondaries below sulphur-yellow, densely irrorated with blackish scales, the costa and apical area of primaries pale sulphur-yellow; the black spots with two black dots between them. Expanse of wings, ♂ 67 millim., ♀ 72 millim.

Madeira (*T. V. Wollaston*).